

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE HONORABLE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of: **Gregory A. Holbrook, et al.**  
Application No.: **10/601,448** Examiner: **KRAMER, Devon C.**  
Filed: **June 23, 2003** Docket No.: **FIRZ 2 00143**  
For: **SYSTEM AND METHOD FOR DETERMINING APPROPRIATE  
CONDITIONS FOR LEVELING A VEHICLE HAVING AN AIR  
SUSPENSION SYSTEM**

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Respectfully submitted,  
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PATENT APPLICATION

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In re the Application of Holbrook, et al.

Application No.: 10/601,448

Examiner: Devon C. Kramer

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Docket No.: P03042US1A  
FIRZ 2 00143

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SUSPENSION SYSTEM**

BRIEF ON APPEAL

Appeal from Group 3683

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I. REAL PARTY IN INTEREST

The real party in interest for this appeal and the present application is BFS Diversified Products, LLC, now of Indianapolis, Indiana, by way of an Assignment recorded in the U.S. Patent and Trademark Office at Reel 014224, Frame 0053.

II. STATEMENT OF RELATED APPEALS AND INTERFERENCES

There are no prior or pending appeals, interferences or judicial proceedings, known to Appellants, Appellants' representative, or the Assignee, that may be related to, or which will directly affect or be directly affected by or have a bearing upon this Honorable Board's decision in the pending appeal.

III. STATUS OF CLAIMS

Original claims 1-23 were canceled in an earlier submitted paper.

Claims 24-46, as amended in the paper dated December 28, 2005, are currently pending and were rejected in a final Office Action (hereinafter "the Office Action") issued on March 9, 2006.

Claims 24-46 are on appeal.

A current copy of the pending claims appears in the Claims Appendix attached hereto.

IV. STATUS OF AMENDMENTS

No Amendment After Final Rejection has been filed.

V. SUMMARY OF CLAIMED SUBJECT MATTER

Claim 24 is directed to a method of performing a leveling action on a vehicle having a height adjustable air suspension system and undergoing a vehicle acceleration. The method includes initiating a leveling action operative to adjust the air suspension system toward a pre-determined height condition of the vehicle. (Pg. 11, Ln. 3) The method also includes discontinuing the leveling action upon the vehicle acceleration exceeding a first pre-determined acceleration threshold. (Pg. 12, Ln. 16) Such a

discontinuation of the leveling action occurs prior to the suspension system achieving the pre-determined height condition. (Pg. 13, Ln. 7) The method further includes waiting until the vehicle acceleration decreases below a second pre-determined acceleration threshold that is less than the first pre-determined acceleration threshold. (Pg. 13, Ln. 18) The method also includes continuing the earlier discontinued leveling action to adjust the suspension system toward the pre-determined height condition. (Pg. 13, Ln. 21)

**Claim 31** is directed to a method wherein the action of waiting until the vehicle acceleration decreases below a second pre-determined acceleration threshold includes waiting until the vehicle acceleration has been below the second pre-determined acceleration threshold for a pre-determined period of time. (Pg. 13, Ln. 9)

**Claim 33** is directed to a method of executing a leveling action on a vehicle having a height adjustable air suspension system. The method includes initiating a leveling action for adjusting the suspension system toward a pre-determined height condition of the vehicle. (Pg. 11, Ln. 13) The method also includes determining an acceleration value of an acceleration acting on the vehicle, and comparing the acceleration value to a first pre-determined threshold value. (Pg. 12, Ln. 13; Pg. 13, Ln. 1) The method further includes discontinuing the leveling action in response to the acceleration value exceeding the first pre-determined threshold value. The method is then operative to wait until the acceleration value is one of less than and substantially equal to a second pre-determined threshold value that is less than the first pre-determined threshold value. (Pg. 13, Ln. 18) Thereafter, the method is operative to continue the leveling action adjusting the suspension system toward the pre-determined height condition of the vehicle. (Pg. 13, Ln. 21)

**Claim 34** is directed to a method wherein the action of waiting includes waiting until the acceleration value has been one of less than and substantially equal to the second pre-determined threshold value for a pre-determined duration. (Pg. 13, Ln. 9)

**Claim 38** is directed to a method wherein the air suspension system includes a controller that at least partially executes the leveling action, and wherein the operation of continuing the leveling action includes the controller acting to continue the leveling action once the acceleration value has been one of less than and substantially equal to

the second pre-determined threshold value for a pre-determined duration. (Pg. 13, Ln. 9)

**Claim 44** is directed to a method of leveling a vehicle having a height adjustable air suspension system that includes a controller, an acceleration-determining device, a comparator and a memory storing a first pre-determined threshold value and a second pre-determined threshold value that is less than the first pre-determined threshold value. (Pg. 6, Ln. 21) The method includes determining an acceleration value of the vehicle using the acceleration-determining device, and comparing the acceleration value to the first pre-determined threshold value using the comparator. (Pg. 12, Ln. 16; Pg. 13, Ln. 1) The method also includes initiating a leveling action using the controller to adjust the suspension system toward a pre-determined height condition of the vehicle in response to the acceleration value being one of less than and substantially equal to the first pre-determined threshold value. (Pg. 12, Ln. 16) The method further includes repeating the foregoing actions until the acceleration value is greater than the first pre-determined threshold value, and discontinuing the leveling action prior to the suspension system achieving the pre-determined height condition in response to the acceleration value being greater than the first pre-determined threshold value. (Pg. 12, Ln. 2) The method also includes waiting until the acceleration value is one of less than and substantially equal to the second pre-determined threshold value and, then, continuing the discontinued leveling action to adjust the suspension system toward the pre-determined height condition. (Pg. 13, Ln. 18)

**Claim 45** is directed to a method wherein the suspension system includes a timer, and the action of waiting includes determining that the acceleration value is one of less than and substantially equal to the second pre-determined threshold value for a pre-determined period of time using the timer. (Pg. 13, Ln. 9)

#### VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The following grounds of rejection are presented for review:

ISSUE 1. Whether independent claim 24 and its dependent claims 25-27 and 29-32 are properly rejected under 35 U.S.C. §103(a) as being obvious over Shono et al. (U.S. Patent No. 6,298,292) in view of Raad et al. (U.S. Patent No. 5,430,647),

and whether its dependent **claim 28** is properly rejected under 35 U.S.C. §103(a) as being obvious over Shono et al. (U.S. Patent No. 6,298,292) in view of Raad et al. (U.S. Patent No. 5,430,647) and in further view of Karnopp (U.S. Patent No. 5,346,242).

**ISSUE 2.** Whether **claims 31 and 32** are properly rejected under 35 U.S.C. §103(a) as being obvious over Shono et al. (U.S. Patent No. 6,298,292) in view of Raad et al. (U.S. Patent No. 5,430,647).

**ISSUE 3.** Whether independent **claim 33** and its dependent **claims 34-43** are properly rejected under 35 U.S.C. §103(a) as being obvious over Shono et al. (U.S. Patent No. 6,298,292) in view of Raad et al. (U.S. Patent No. 5,430,647).

**ISSUE 4.** Whether **claims 34 and 38** are properly rejected under 35 U.S.C. §103(a) as being obvious over Shono et al. (U.S. Patent No. 6,298,292) in view of Raad et al. (U.S. Patent No. 5,430,647).

**ISSUE 5.** Whether independent **claim 44** and its dependent **claims 45 and 46** are properly rejected under 35 U.S.C. §103(a) as being obvious over Shono et al. (U.S. Patent No. 6,298,292) in view of Raad et al. (U.S. Patent No. 5,430,647).

**ISSUE 6.** Whether **claim 45** is properly rejected under 35 U.S.C. §103(a) as being obvious over Shono et al. (U.S. Patent No. 6,298,292) in view of Raad et al. (U.S. Patent No. 5,430,647).

## VII. ARGUMENTS

### A. Background

As discussed in the subject application from about paragraphs [0003] to about [0006], known height-adjustable vehicle suspension systems typically utilize sophisticated and relatively complex control systems and schemes to maintain the vehicle height and/or orientation while avoiding undesirable conditions and/or performance characteristics. Conversely, the invention of the subject application is directed to a control system and method of operation that is greatly simplified in comparison to known arrangements, such as that in U.S. Patent No. 5,430,647 to Raad et al. (hereinafter referred to as "Raad"), for example, which is specifically mentioned in paragraph [0004] of the present application.

Another example of a known system is disclosed in U.S. Patent No. 6,298,292 to Shono et al. (hereinafter referred to as "Shono"), which is relied upon as the primary document in rejecting the subject claims. To assist in illustrating that Shono does not teach or suggest the claimed method of operation, a brief discussion based on Appellants' reading and understanding of the differences between the present application and the complex control scheme in Shono is presented below.

1. U.S. Patent No. 6,298,292 to Shono et al.

Shono is directed to a vehicle height adjust control apparatus and method that is operative to control vehicle height in a manner that is capable of reducing noise produced by the actuation of the various components of a vehicle suspension system, as discussed beginning at about column 1, line 4 of Shono. The system in Shono includes a microcomputer 30 that executes a main program, shown as items 100-122 in FIG. 2, and a drive control program, shown as items 400-422 in FIG. 5, repeatedly every pre-determined short period of time to thereby control the supply and discharge of hydraulic fluid, as discussed beginning at about column 5, line 25. The main program includes a start detection routine, which is shown as items 200-224 in FIG. 3, and a vehicle height changing routine, which is shown as items 300-324 in FIG. 4.

a. **Shono's Complexity Due In Part To Utilizing Numerous Operational Flags And Variables**

Main program 100-122 in FIG. 2 and subroutines 200-224 in FIG. 3 and 300-324 in FIG. 4 operate to set and evaluate the value of numerous operational variables or flags based upon a comparison of performance conditions of the vehicle with pre-determined operational values. These flags include a "state flag" SF which indicates a detected state of the acceleration acting on the vehicle. State flag SF can have a value of "0", "1" or "2" depending upon the acceleration acting on the vehicle. Additionally, the main program and subroutines include a "changing flag" CF and a "change start flag" CS, both of which can have a value of either "0" or "1". Furthermore, the vehicle height changing routine and drive control program utilize additional operational variables or flags, such as a front raising flag FU, a front lowering flag FD, a rear raising flag RU and

a rear lowering flag **RD**. If it is not apparent from the foregoing that the apparatus and method of Shono are complex, a further indication of the level of sophistication of the control scheme of Shono is suggested by the detailed explanation of the operation of the control scheme, which covers nearly three full pages of the document beginning at about column 5, line 57 and ending at about column 11, line 41.

b. Shono Does Not Use A Second Lower Acceleration Value To Continue The Earlier Discontinued Leveling Action

Shono also discusses the use of predetermined acceleration values **G1** and **G2** to which a vehicle acceleration **Gx** is compared to determine the appropriate value for state flag **SF** during a given iteration of the main program. In summary, the system and method in Shono are fully operative to make height corrections when the vehicle acceleration **Gx** is below value **G1** (which corresponds to a state flag value of **SF = "0"**), as discussed beginning at about line 39 in column 6 of Shono. At vehicle acceleration levels between values **G1** and **G2** (which corresponds to a state flag value of **SF = "1"**), the system and method will prevent the start of a vehicle height adjustment routine. However, ongoing height adjustment routines are not halted, as is discussed in Shono beginning at about line 35 of column 10. If the vehicle acceleration exceeds acceleration value **G2** (which corresponds to a state flag value of **SF = "2"**), the system and method of Shono will prevent the start of any height adjustment routine and halt any ongoing height changing control, as discussed beginning at about column 10, line 58. Importantly, however, Shono does not teach or suggest the use of a second, lower acceleration threshold value for determining conditions suitable for continuing an earlier discontinued (i.e., previously initiated and currently paused) leveling action, as will be discussed in additional detail below.

c. Shono Does Not Disclose Continuing An Earlier Discontinued Leveling Action

As discussed beginning at about column 11, line 2 of Shono, the height changing control is restarted once vehicle acceleration **Gx** has decreased below acceleration value **G2**. However, Shono does not simply restart the earlier halted height changing

action once the above condition is reached. Rather, a new height changing action is initiated using new performance data and values. More specifically, during the next iteration of the main program, state flag **SF** will be assigned a value of "0" or "1" depending on the magnitude of vehicle acceleration **Gx**. Then, after performing another iteration of the start determining routine (items 200-224 in FIG. 3) and another iteration of the vehicle height changing routine (items 300-324 in FIG. 4), a new height changing action based upon the most recent height and/or acceleration data is initiated. This is not the same, however, as continuing an earlier discontinued leveling action, which would be based upon the originally determined data and/or information.

Thus, once height change routine 300 ends, the system returns to main program 100. So, method steps 102-116 and start determining routine 118 (i.e., items 200-224 in FIG. 3) are again performed before height changing routine 120 (i.e., items 300-324 in FIG. 4) is reached and can again be initiated. As a result, a new iteration of the program routine is performed. This cannot be considered a continuation of the previously initiated leveling action, as recited in the presently presented claims. Rather, this is a new vehicle height changing routine based upon new data and/or instructions from steps 102-116. Therefore, Shono does not teach or suggest a step of continuing an earlier initiated leveling action as recited in the pending claims, as presently amended.

#### B. Complexity of Known Systems Is Relevant

The foregoing discussion of Shono is provided because the Office Action relies upon this document as a primary reference in rejecting the claims of the subject application. As such, Appellants believe that a detailed explanation is useful to clearly present what the reference does and does not teach or suggest.

Furthermore, Appellants appreciate that much has been made in the above discussion of the complexity of known systems, and of the complexity of the cited documents in particular. However, one of the primary advantages of the present invention is the simple operation and the minimal computing power with which it can be performed. As this Honorable Board is aware, a simple invention is not necessarily an

obvious one. See EWP Corp. v. Reliance Universal Inc., 225 USPQ 20, 25 (Fed. Cir. 1985).

**C. Claims 24-27 and 29-32 Are Not Obvious Over Shono et al. In View of Raad et al. and Claim 28 Is Not Obvious In Further View of Karnopp**

Claims 24-32 are not obvious over Shono in view of Raad, and in the case of claim 28 in further view of Karnopp, because (1) all of the claim limitations are not taught or suggested by the documents of record, (2) there is no suggestion or motivation in the art for modifying the primary reference in the manner proposed in the Office Action, and (3) the Office Action impermissibly relies upon hindsight reconstruction to form the present rejections.

**1. The References of Record Do Not, Alone or In Combination, Teach or Suggest All of The Recited Elements**

To establish *prima facie* obviousness of a claimed invention, all of the claim limitations must be taught or suggested by the prior art. MPEP §2143.03, citing In re Royka, 180 USPQ 580 (CCPA 1974).

The Office Action asserts that Shono teaches a hydraulic suspension system that includes performance of all of the method steps recited in the subject claims. The Office Action further asserts that Raad teaches an air suspension system and that it would have been obvious to have provided the method of Shono with an air suspension such as that in Raad.

However, contrary to the position asserted in the Office Action, Shono does not teach or suggest all of the actions recited in the subject claims. Furthermore, the deficiencies of Shono are not remedied by any of the other art of record. For at least this reason, the *prima facie* rejection of the currently pending claims under 35 U.S.C. §103(a) is improper.

**a. No Teaching or Suggestion in Shono of Discontinuing/Continuing Leveling Action**

As discussed in detail in Section VII(A)(1)(c), Shono does not teach or suggest a method of operation that involves discontinuing an ongoing leveling action, waiting until a performance condition is met, and then continuing the earlier initiated leveling action. Rather, Shono suspends an ongoing height change in one iteration of the vehicle height changing routine (i.e., items 300-324 in FIG. 4) and then terminates or ends that iteration of the vehicle height change routine and returns to the main program. During the next iteration of the main program (i.e., items 100-116 in FIG. 2), new data, values and/or settings are acquired corresponding to the most recent performance conditions of the vehicle. Thereafter, start determining routine 118 (i.e., items 200-224 in FIG. 3) is again performed using the new data, values and/or settings, before another iteration of the vehicle height changing routine can occur. Said differently, Shono ends a first leveling action in response to a performance condition, and then initiates another, different leveling action from scratch at a later time. This is a significant departure from the claimed subject matter of the present application.

As indicated above, the references of record must teach or suggest all of the claimed limitations. Since, at least one or more of the current claim limitations are not taught or suggested by the art of record, Appellants respectfully submit that the *prima facie* rejection of the currently pending claims under 35 U.S.C. §103(a) is improper.

b. No Teaching or Suggestion in Shono of using Second, Lower Acceleration Threshold Value

As discussed in detail in Section VII(A)(1)(b), Shono does not teach or suggest the use of a second, lower acceleration threshold value for determining conditions suitable for continuing the earlier initiated leveling action. This is acknowledged in Office Action, in the second to last sentence on page 2 thereof, which states that "Shono lacks the teaching of the second threshold value being less than the first threshold value." This deficiency of Shono is not remedied by the disclosure of any of the other art of record.

As indicated above, the references of record must teach or suggest all of the claimed limitations. Since, at least one or more of the current claim limitations are not

taught or suggested by the art of record, Appellants respectfully submit that the *prima facie* rejection of the currently pending claims under 35 U.S.C. §103(a) is improper.

2. / There Is No Suggestion or Motivation In The Prior Art For Modifying The Primary Reference As Stated

There must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings, as discussed in MPEP §2143 citing In re Vaeck, 20 USPQ2d 1483 (Fed. Cir. 1991).

Though acknowledging that Shono lacks the teaching of the second acceleration threshold value, the Office Action asserts that all of the method steps of the subject claims are recited in Shono and, thus, that the general conditions of the claim are met. The Office Action then further asserts that the use of the second threshold value is merely changing the time when the leveling device is operated. Such a timing change, it is asserted, is akin to discovering an optimum or workable range of operation, which involves only routine skill in the art.

The Office Action, in referring to the use of the second acceleration threshold value, asserts (toward the bottom of page 2 thereof) that the subject matter of the present application is merely modifying the Shono reference to continue the leveling when it is ensured that the vehicle is not going to be encountering excessive acceleration. Therefore, the Office Action asserts (beginning at the top of page 3 thereof), it would have been obvious to have controlled the leveling device of Shono to allow leveling of the vehicle after the vehicle reaches a second pre-determined acceleration value which is less than the first pre-determined acceleration value to prevent prematurely leveling the vehicle during times when a vehicle is experiencing extreme changes in acceleration.

However, the Office Action points to no suggestion or motivation for making the asserted modification to Shono. Rather, the Office Action merely states in a conclusory manner that such a modification would have been obvious to the skilled artisan. Thus, Appellants respectfully submit that the *prima facie* rejection of the currently pending claims under 35 U.S.C. §103(a) is improper.

3. Impermissible Hindsight Reconstruction Is Being Used

A claimed invention is unpatentable if the differences between it and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the pertinent art. In re Kahn, 78 USPQ2d 1329 (Fed. Cir. 2006) citing 35 U.S.C. §103(a). When, however, an Office Action does not explain the motivation, or the suggestion or teaching, that would have led the skilled artisan at the time of the invention to the claimed combination as a whole, it is inferred that the Office Action used hindsight to conclude that the invention was obvious. See In re Rouffett, 47 USPQ2d 1453 (Fed. Cir. 1998).

Since there is no teaching or suggestion in the art of record for making the proposed modifications to Shono, and the Office Action points to no such language, it is respectfully submitted that Appellants' disclosure is impermissibly being used to formulate the present rejections.

Applicants respectfully submit that evidence of the use of such impermissible hindsight reconstruction is even present in the Office Action itself, which states that "applicant is merely modifying the Shono reference to continue the leveling when it is ensured that the vehicle is not going to be encountering excessive acceleration." In light of this statement, it is clear that the Examiner is trying to force the claims of the subject application to fit into the teaching of the cited reference, rather than applying a reference to the claimed subject matter.

It is respectfully submitted that this further indicates that hindsight reasoning is being employed. Thus, Appellants respectfully submit that the *prima facie* rejection of the currently pending claims under 35 U.S.C. §103(a) is improper.

**D. Claims 31 and 32 Are Not Obvious Over Shono et al. in View of Raad et al.**

Claim 31 depends from independent claim 24 and further presents an action of waiting until the acceleration has been below the second pre-determined acceleration threshold value for a pre-determined period of time. Claim 32 depends from claim 31 and presents a time duration.

In addition to the reasons presented above in Section VII(C), claims 31 and 32 are not obvious over Shono in view of Raad because all of the claim limitations are not taught or suggested by the documents of record. This is acknowledged in the Office Action (toward the bottom of page 3 thereof), which states that "Shono lacks a specific predetermined time".

The Office Action continues, however, stating that "inherently a predetermined amount of time must pass in order for the controller to initiate the leveling". Appellants respectfully submit, however, that the asserted teaching is simply not the same as an affirmative step of waiting for a condition (e.g., the decrease of a vehicle acceleration value) to occur for a pre-determined duration before taking another action.

As indicated above, the references of record must teach or suggest all of the claimed limitations. Since, at least one or more of the current claim limitations are not taught or suggested by the art of record, Appellants respectfully submit that the *prima facie* rejection of the currently pending claims under 35 U.S.C. §103(a) is improper.

**E. Claims 33-43 Are Not Obvious Over Shono et al. In View of Raad et al.**

Claims 33-43 are not obvious over Shono in view of Raad because (1) all of the claim limitations are not taught or suggested by the documents of record, (2) there is no suggestion or motivation in the art for modifying the primary reference in the manner proposed in the Office Action, and (3) the Office Action impermissibly relies upon hindsight reconstruction to form the present rejections.

**1. The References of Record Do Not, Alone or In Combination, Teach or Suggest All of The Recited Elements**

To establish *prima facie* obviousness of a claimed invention, all of the claim limitations must be taught or suggested by the prior art. MPEP §2143.03, citing *In re Royka*, 180 USPQ 580 (CCPA 1974).

The Office Action asserts that Shono teaches a hydraulic suspension system that includes performance of all of the method steps recited in the subject claims. The Office Action further asserts that Raad teaches an air suspension system and that it

would have been obvious to have provided the method of Shono with an air suspension such as that in Raad.

However, contrary to the position asserted in the Office Action, Shono does not teach or suggest all of the actions recited in the subject claims. Furthermore, the deficiencies of Shono are not remedied by any of the other art of record. For at least this reason, the *prima facie* rejection of the currently pending claims under 35 U.S.C. §103(a) is improper.

a. **No Teaching or Suggestion in Shono of Discontinuing/Continuing Leveling Action**

As discussed in detail in Section VII(A)(1)(c), Shono does not teach or suggest a method of operation that involves discontinuing an ongoing leveling action, waiting until a performance condition is met, and then continuing the earlier initiated leveling action. Rather, Shono suspends an ongoing height change in one iteration of the vehicle height changing routine (i.e., items 300-324 in FIG. 4) and then terminates or ends that iteration of the vehicle height change routine and returns to the main program. During the next iteration of the main program (i.e., items 100-116 in FIG. 2), new data, values and/or settings are acquired corresponding to the latest performance conditions of the vehicle. Thereafter, start determining routine 118 (i.e., items 200-224 in FIG. 3) is again performed using the new data, values and/or settings, before another iteration of the vehicle height changing routine can occur. Said differently, Shono ends a first leveling action in response to a performance condition, and then initiates another, different leveling action from scratch at a later time. This is a significant departure from the claimed subject matter of the present application.

As indicated above, the references of record must teach or suggest all of the claimed limitations. Since, at least one or more of the current claim limitations are not taught or suggested by the art of record, Appellants respectfully submit that the *prima facie* rejection of the currently pending claims under 35 U.S.C. §103(a) is improper.

b. **No Teaching or Suggestion in Shono of using Second, Lower Acceleration Threshold Value**

As discussed in detail in Section VII(A)(1)(b), Shono does not teach or suggest the use of a second, lower acceleration threshold value for determining conditions suitable for continuing the earlier initiated leveling action. This is acknowledged in Office Action, in the second to last sentence on page 2 thereof, which states that "Shono lacks the teaching of the second threshold value being less than the first threshold value." This deficiency of Shono is not remedied by the disclosure of any of the other art of record.

As indicated above, the references of record must teach or suggest all of the claimed limitations. Since, at least one or more of the current claim limitations are not taught or suggested by the art of record, Appellants respectfully submit that the *prima facie* rejection of the currently pending claims under 35 U.S.C. §103(a) is improper.

2. There Is No Suggestion or Motivation In The Prior Art For Modifying The Primary Reference As Stated

There must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings, as discussed in MPEP §2143 citing In re Vaeck, 20 USPQ2d 1483 (Fed. Cir. 1991).

Though acknowledging that Shono lacks the teaching of the second acceleration threshold value, the Office Action asserts that all of the method steps of the subject claims are recited in Shono and, thus, that the general conditions of the claim are met. The Office Action then further asserts that the use of the second threshold value is merely changing the time when the leveling device is operated. Such a timing change, it is asserted, is akin to discovering an optimum or workable range of operation, which involves only routine skill in the art.

The Office Action, in referring to the use of the second acceleration threshold value, asserts (toward the bottom of page 2 thereof) that the subject matter of the present application is merely modifying the Shono reference to continue the leveling when it is ensured that the vehicle is not going to be encountering excessive acceleration. Therefore, the Office Action asserts (beginning at the top of page 3 thereof), it would have been obvious to have controlled the leveling device of Shono to allow leveling of the vehicle after the vehicle reaches a second pre-determined

acceleration value which is less than the first pre-determined acceleration value to prevent prematurely leveling the vehicle during times when a vehicle is experiencing extreme changes in acceleration.

However, the Office Action points to no suggestion or motivation for making the asserted modification to Shono. Rather, the Office Action merely states in a conclusory manner that such a modification would have been obvious to the skilled artisan. Thus, Appellants respectfully submit that the *prima facie* rejection of the currently pending claims under 35 U.S.C. §103(a) is improper.

### 3. Impermissible Hindsight Reconstruction Is Being Used

A claimed invention is unpatentable if the differences between it and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the pertinent art. *In re Kahn*, 78 USPQ2d 1329 (Fed. Cir. 2006) citing 35 U.S.C. §103(a). When, however, an Office Action does not explain the motivation, or the suggestion or teaching, that would have led the skilled artisan at the time of the invention to the claimed combination as a whole, it is inferred that the Office Action used hindsight to conclude that the invention was obvious. See *In re Rouffett*, 47 USPQ2d 1453 (Fed. Cir. 1998).

Since there is no teaching or suggestion in the art of record for making the proposed modifications to Shono, and the Office Action points to no such language, it is respectfully submitted that Appellants' disclosure is impermissibly being used to formulate the present rejections.

Applicants respectfully submit that evidence of the use of such impermissible hindsight reconstruction is even present in the Office Action itself, which states that "applicant is merely modifying the Shono reference to continue the leveling when it is ensured that the vehicle is not going to be encountering excessive acceleration." In light of this statement, it is clear that the Examiner is trying to force the claims of the subject application to fit into the teaching of the cited reference, rather than applying a reference to the claimed subject matter.

It is respectfully submitted that this further indicates that hindsight reasoning is being employed. Thus, Appellants respectfully submit that the *prima facie* rejection of the currently pending claims under 35 U.S.C. §103(a) is improper.

**F. Claims 34 and 38 Are Not Obvious Over Shono et al. in View of Raad et al.**

Claim 34 depends from independent claim 33 and further presents an action of waiting until the acceleration has been below the second pre-determined acceleration threshold value for a pre-determined duration. Claim 38 depends from claim 36, which depends from independent claim 33. Claim 38 presents a further limitation in which the controller acts to continue the leveling action once the acceleration value has been one of less than and substantially equal to the second threshold value for a pre-determined duration.

In addition to the reasons presented above in Section VII(E), claims 34 and 38 are not obvious over Shono in view of Raad because all of the claim limitations are not taught or suggested by the documents of record. This is acknowledged in the Office Action (toward the bottom of page 3 thereof), which states that "Shono lacks a specific predetermined time".

The Office Action continues, however, stating that "inherently a predetermined amount of time must pass in order for the controller to initiate the leveling". Appellants respectfully submit, however, that the asserted teaching is not the same as an affirmative step of waiting for a condition (e.g., the decrease of a vehicle acceleration value) to occur for a pre-determined duration before taking another action.

As indicated above, the references of record must teach or suggest all of the claimed limitations. Since, at least one or more of the current claim limitations are not taught or suggested by the art of record, Appellants respectfully submit that the *prima facie* rejection of the currently pending claims under 35 U.S.C. §103(a) is improper.

**G. Claims 44-46 Are Not Obvious Over Shono et al. in View of Raad et al.**

Claims 44-46 are not obvious over Shono in view of Raad because (1) all of the claim limitations are not taught or suggested by the documents of record, (2) there is no suggestion or motivation in the art for modifying the primary reference in the manner proposed in the Office Action, and (3) the Office Action impermissibly relies upon hindsight reconstruction to form the present rejections.

1. The References of Record Do Not, Alone or In Combination, Teach or Suggest All of The Recited Elements

To establish *prima facie* obviousness of a claimed invention, all of the claim limitations must be taught or suggested by the prior art. MPEP §2143.03, citing In re Royka, 180 USPQ 580 (CCPA 1974).

The Office Action asserts that Shono teaches a hydraulic suspension system that includes performance of all of the method steps recited in the subject claims. The Office Action further asserts that Raad teaches an air suspension system and that it would have been obvious to have provided the method of Shono with an air suspension such as that in Raad.

However, contrary to the position asserted in the Office Action, Shono does not teach or suggest all of the actions recited in the subject claims. Furthermore, the deficiencies of Shono are not remedied by any of the other art of record. For at least this reason, the *prima facie* rejection of the currently pending claims under 35 U.S.C. §103(a) is improper.

a. No Teaching or Suggestion in Shono of Discontinuing/Continuing Leveling Action

As discussed in detail in Section VII(A)(1)(c), Shono does not teach or suggest a method of operation that involves discontinuing an ongoing leveling action, waiting until a performance condition is met, and then continuing the earlier initiated leveling action. Rather, Shono suspends an ongoing height change in one iteration of the vehicle height changing routine (i.e., items 300-324 in FIG. 4) and then terminates or ends that iteration of the vehicle height change routine and returns to the main program. During the next iteration of the main program (i.e., items 100-116 in FIG. 2), new data, values and/or settings are acquired corresponding to the most recent performance conditions

of the vehicle. Thereafter, start determining routine 118 (i.e., items 200-224 in FIG. 3) is again performed using the new data, values and/or settings, before another iteration of the vehicle height changing routine can occur. Said differently, Shono ends a first leveling action in response to a performance condition, and then initiates another, different leveling action from scratch at a later time. This is a significant departure from the claimed subject matter of the present application.

As indicated above, the references of record must teach or suggest all of the claimed limitations. Since, at least one or more of the current claim limitations are not taught or suggested by the art of record, Appellants respectfully submit that the *prima facie* rejection of the currently pending claims under 35 U.S.C. §103(a) is improper.

b. No Teaching or Suggestion in Shono of using Second, Lower Acceleration Threshold Value

As discussed in detail in Section VII(A)(1)(b), Shono does not teach or suggest the use of a second, lower acceleration threshold value for determining conditions suitable for continuing the earlier initiated leveling action. This is acknowledged in Office Action, in the second to last sentence on page 2 thereof, which states that "Shono lacks the teaching of the second threshold value being less than the first threshold value." This deficiency of Shono is not remedied by the disclosure of any of the other art of record.

As indicated above, the references of record must teach or suggest all of the claimed limitations. Since, at least one or more of the current claim limitations are not taught or suggested by the art of record, Appellants respectfully submit that the *prima facie* rejection of the currently pending claims under 35 U.S.C. §103(a) is improper.

2. There Is No Suggestion or Motivation In The Prior Art For Modifying The Primary Reference As Stated

There must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings, as discussed in MPEP §2143 citing In re Vaeck, 20 USPQ2d 1483 (Fed. Cir. 1991).

Though acknowledging that Shono lacks the teaching of the second acceleration threshold value, the Office Action asserts that all of the method steps of the subject claims are recited in Shono and, thus, that the general conditions of the claim are met. The Office Action then further asserts that the use of the second threshold value is merely changing the time when the leveling device is operated. Such a timing change, it is asserted, is akin to discovering an optimum or workable range of operation, which involves only routine skill in the art.

The Office Action, in referring to the use of the second acceleration threshold value, asserts (toward the bottom of page 2 thereof) that the subject matter of the present application is merely modifying the Shono reference to continue the leveling when it is ensured that the vehicle is not going to be encountering excessive acceleration. Therefore, the Office Action asserts (beginning at the top of page 3 thereof), it would have been obvious to have controlled the leveling device of Shono to allow leveling of the vehicle after the vehicle reaches a second pre-determined acceleration value which is less than the first pre-determined acceleration value to prevent prematurely leveling the vehicle during times when a vehicle is experiencing extreme changes in acceleration.

However, the Office Action points to no suggestion or motivation for making the asserted modification to Shono. Rather, the Office Action merely states in a conclusory manner that such a modification would have been obvious to the skilled artisan. Thus, Appellants respectfully submit that the *prima facie* rejection of the currently pending claims under 35 U.S.C. §103(a) is improper.

### 3. Impermissible Hindsight Reconstruction Is Being Used

A claimed invention is unpatentable if the differences between it and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the pertinent art. *In re Kahn*, 78 USPQ2d 1329 (Fed. Cir. 2006) citing 35 U.S.C. §103(a). When, however, an Office Action does not explain the motivation, or the suggestion or teaching, that would have led the skilled artisan at the time of the invention to the claimed combination as a whole,

it is inferred that the Office Action used hindsight to conclude that the invention was obvious. See In re Rouffett, 47 USPQ2d 1453 (Fed. Cir. 1998).

Since there is no teaching or suggestion in the art of record for making the proposed modifications to Shono, and the Office Action points to no such language, it is respectfully submitted that Appellants' disclosure is impermissibly being used to formulate the present rejections.

Applicants respectfully submit that evidence of the use of such impermissible hindsight reconstruction is even present in the Office Action itself, which states that "applicant is merely modifying the Shono reference to continue the leveling when it is ensured that the vehicle is not going to be encountering excessive acceleration." In light of this statement, it is clear that the Examiner is trying to force the claims of the subject application to fit into the teaching of the cited reference, rather than applying a reference to the claimed subject matter.

It is respectfully submitted that this further indicates that hindsight reasoning is being employed. Thus, Appellants respectfully submit that the *prima facie* rejection of the currently pending claims under 35 U.S.C. §103(a) is improper.

#### **H. Claim 45 Is Not Obvious Over Shono et al. in View of Raad et al.**

Claim 45 depends from independent claim 44 and further presents a timer and an action of waiting until the acceleration has been below the second pre-determined acceleration threshold value for a pre-determined period of time using the timer.

In addition to the reasons presented above in Section VII(G), claim 45 is not obvious over Shono in view of Raad because all of the claim limitations are not taught or suggested by the documents of record. More specifically, Shono does not teach or suggest an affirmative step of waiting until the acceleration value is one of less than and substantially equal to the second pre-determined threshold value for a pre-determined period of time, as recited in claim 45. This is acknowledged in the Office Action (toward the bottom of page 3 thereof), which states that "Shono lacks a specific predetermined time". The Office Action continues, however, to state that "inherently a predetermined amount of time must pass in order for the controller to initiate the leveling". Appellants

respectfully submit, however, that the asserted teaching is simply not the same as waiting for a condition (e.g., the decrease of a vehicle acceleration value) to occur for a pre-determined duration before taking another action.

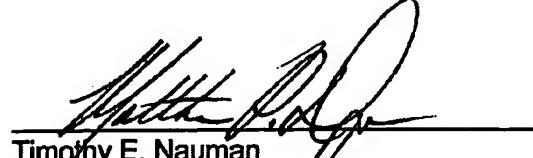
Additionally, claim 45 includes providing a timer and performing the action of waiting for the decrease in acceleration to occur for a pre-determined period of time using the timer. Shono does not teach or suggest the use of a timer and, in particular, not in the manner recited in claim 45. The Office Action asserts (toward the middle of page 4 thereof) that Shono "differentiates the velocity to calculate the acceleration and therefore there must be some timing device in order to perform the calculation." However, even if a timing device were taught or suggested by Shono, which it is not, there is no teaching or suggestion of using such a timing device in the manner recited in claim 45.

As indicated above, the references of record must teach or suggest all of the claimed limitations. Since, at least one or more of the current claim limitations are not taught or suggested by the art of record, Appellants respectfully submit that the *prima facie* rejection of the currently pending claims under 35 U.S.C. §103(a) is improper.

VIII. CONCLUSION

For all of the reasons discussed above, it is respectfully submitted that the rejections are in error and that claims 24-46 are in condition for allowance. For all of the above reasons, Appellants respectfully request that this Honorable Board reverse the rejections of claims 24-46.

Respectfully submitted,



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Filed: July 8, 2006

CLAIMS APPENDIX

**CLAIMS INVOLVED IN THE APPEAL:**

24. A method of performing a leveling action on a vehicle having a height adjustable air suspension system and undergoing a vehicle acceleration, said method comprising steps of:

- a) initiating a leveling action adjusting said suspension system toward a pre-determined height condition of the vehicle;
- b) discontinuing said leveling action upon the vehicle acceleration exceeding a first pre-determined acceleration threshold prior to said suspension system achieving said pre-determined height condition;
- c) waiting until the vehicle acceleration decreases below a second pre-determined acceleration threshold that is less than said first pre-determined threshold; and,
- d) continuing said leveling action adjusting said suspension system toward said pre-determined height condition.

25. A method according to claim 24, wherein said suspension system includes a controller and said method includes said controller acting to at least partially execute step a).

26. A method according to claim 25, wherein said method includes said controller acting to at least partially execute at least one of steps b) and d).

27. A method according to claim 24, wherein said method includes steps of determining the vehicle acceleration, comparing the vehicle acceleration with said first pre-determined acceleration threshold, and determining that the vehicle acceleration is greater than said first pre-determined acceleration threshold prior to step b).
28. A method according to claim 27, wherein said air suspension system includes an accelerometer and a controller, and said method includes steps of said accelerometer measuring the vehicle acceleration and communicating a signal to said controller.
29. A method according to claim 24, wherein said first pre-determined threshold is an acceleration value of from about 0.2g to about 0.4g.
30. A method according to claim 24, wherein said second pre-determined threshold is an acceleration value of from about 0.05g to about 0.25g.
31. A method according to claim 24, wherein step c) includes waiting until the vehicle acceleration has been below said second pre-determined acceleration threshold for a pre-determined period of time.
32. A method according to claim 31, wherein said pre-determined period of time is one of greater than and substantially equal to about one second.

33. A method of executing a leveling action on a vehicle having a height adjustable air suspension system, said method comprising steps of:

- a) initiating a leveling action adjusting said suspension system toward a pre-determined height condition of the vehicle;
- b) determining an acceleration value of an acceleration acting on the vehicle;
- c) comparing said acceleration value to a first pre-determined threshold value;
- d) discontinuing said leveling action in response to said acceleration value exceeding said first pre-determined threshold value;
- e) waiting until said acceleration value is one of less than and substantially equal to a second pre-determined threshold value that is less than said first pre-determined threshold value; and,
- f) continuing said leveling action adjusting said suspension system toward a pre-determined height condition of the vehicle.

34. A method according to claim 33, wherein step e) includes waiting until said acceleration value has been one of less than and substantially equal to said second pre-determined threshold for a pre-determined duration.

35. A method according to claim 33, wherein said first pre-determined threshold value is from about 0.2g to about 0.4g.

36. A method according to claim 33, wherein said air suspension system includes a controller and step a) includes said controller at least partially executing said leveling action.

37. A method according to claim 36, wherein step d) includes said controller acting to at least partially discontinue said leveling action.

38. A method according to claim 36, wherein step f) includes said controller acting to continue said leveling action once said acceleration value has been one of less than and substantially equal to said second pre-determined threshold value for a pre-determined duration.

39. A method according to claim 33, wherein said air suspension system includes an acceleration-determining device, and step b) includes said acceleration-determining device determining said acceleration value.

40. A method according to claim 39, wherein step e) includes said acceleration-determining device periodically determining an acceleration value corresponding to the acceleration and outputting a signal representative of said acceleration value.

41. A method according to claim 33, wherein said air suspension system includes a comparator, and step b) includes said comparator receiving a signal representative of said acceleration value and comparing said signal to said first pre-determined threshold.

42. A method according to claim 41, wherein step e) includes said comparator comparing a signal representative of said acceleration value to said second pre-determined value.

43. A method according to claim 33, wherein said air suspension system includes a timer and step e) includes said timer monitoring a duration that said acceleration value is one of less than and substantially equal to said second pre-determined threshold.

44. A method of leveling a vehicle having a height adjustable air suspension system that includes a controller, an acceleration-determining device, a comparator and a memory storing a first pre-determined threshold value and a second pre-determined threshold value that is less than said first pre-determined threshold value, said method comprising steps of:

- a) determining an acceleration value of an acceleration acting on the vehicle using said acceleration-determining device;
- b) comparing said acceleration value to said first pre-determined threshold value using said comparator;
- c) initiating a leveling action using said controller to adjust said suspension system toward a pre-determined height condition of the vehicle in response to said acceleration value being one of less than and substantially equal to said first pre-determined threshold value;
- d) repeating steps a) through c) until said acceleration value is greater than said first pre-determined threshold value;
- e) discontinuing said leveling action prior to said suspension system achieving said pre-determined height condition in response to said acceleration value being greater than said first pre-determined threshold value;
- f) waiting until said acceleration value is one of less than and substantially equal to said second pre-determined threshold value; and,

g) continuing said discontinued leveling action adjusting said suspension system toward said pre-determined height condition.

45. A method according to claim 44, wherein said suspension system includes a timer and step f) includes determining that said acceleration value is one of less than and substantially equal to said second pre-determined threshold value for a pre-determined period of time using said timer.

46. A method according to claim 44 further comprising a step a) repeating steps a) to g) after said suspension system has achieved said pre-determined height condition in step g).

**EVIDENCE APPENDIX**

A copy of each of the following items of evidence relied on by the Appellant  
and/or the Examiner is attached:

NONE

RELATED PROCEEDINGS APPENDIX

Copies of relevant decisions in the following related proceedings are attached:

NONE